

Appln. No. 10/734,758

Attorney Docket No. 11745-25
Client Reference No. EXA-143

II. Remarks

The Applicants thank the Examiner for the brief case interview (via phone) on Monday, November 6, 2006. In the interview, it was agreed that the Examiner was not responsive to assertions made by the Applicants in the Paper filed on July 12, 2006. More specifically, it was agreed that the non-obviousness arguments made by the Applicants regarding the improper combination of two cited references (*Thakrar et al.* and *Li et al.*) were referred to as moot although subsequent combinations in the new grounds of rejections include the same cited references.

Claims 11-22 and 24-35 are pending in the present application. With the remarks and amendments provided herewith, the Applicants respectfully request reconsideration and a withdrawal of all rejections.

It is to be noted that significant differences between screen-printing and pad-printing exist with respect to the composition of the ink utilized. Typically, the inks used in these two application methods are very different in their solvent make-up. In order not to dry in the screen, the ink formulations used in screen-printing contain solvents whose evaporation rates are lower than those used in pad-printing inks. In pad-printing ink formulations, solvent evaporation is utilized to modify rheological properties and surface tension in order to provide a "tacky" film on the pad during transfer. Thus many commercial screen-printing and pad-printing inks will not optimally function in a printing process that combines both conventional printing techniques into one method, such as MIT printing. Therefore, there is a need in the industry to formulate inks that not only may be used in conventional screen-printing or pad-printing application techniques, but also will function in processes that incorporate both conventional techniques into one process.

Examples of the present invention provide inks and a method of printing the inks by a membrane image transfer (MIT) printing process. In one example, the inks exhibit the rheological properties to achieve optimum performance in an MIT printing process. Generally, an MIT printing process is a method of printing that combines both screen printing and pad printing (tampography) into one method for the

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decoration of articles with complex shapes. See Specification of present application, paragraphs [0021] through [0023] and Figures 3a-3d.

Completeness and Clarity of the Examiner's Action Under M.P.E.P. §707.07(f) regarding Rejections under 35 U.S.C. § 103

Responsive to the rejections of claims 11-13, 15, and 35 under 35 U.S.C. §103(a) based on the combination of *Thakrar et al.* (U.S. Patent No. 6,284,161), *Li et al.* (U.S. Patent No. 4,531,122), and *Tazaki* (U.S. Patent No. 6,964,806), the Applicants assert that the Office action mailed on August 8, 2006 is incomplete and unclear, and re-assert the arguments filed in the Paper dated July 12, 2006. For completeness and clarity of the Examiner's action, section 707.07(f) of the M.P.E.P. reads in pertinent part as follows:

In order to provide a complete application file history and to enhance the clarity of the prosecution history record, an examiner must provide clear explanations of all actions taken by the examiner during prosecution of an application.

Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. *Id.*

Applicants note that in the Detailed Action mailed August 8, 2006, the Examiner states on paragraph 9, page 13 thereof that "Applicants' arguments with respect to claim 11-22 and 24-35 have been considered but are moot in view of the new grounds of rejection." Contrarily, the new grounds of rejections in the detailed action mailed August 8, 2006 still include the combination of *Thakrar* and *Li* references (See paragraphs 1-8 of the Detailed Action). Thus, it is respectfully submitted that the Office action mailed on August 8, 2006 is incomplete and unclear as to the assertions that the Applicants had previously made.

As previously stated, the rationale of combining *Thakrar* and *Li* references for rejecting claims 11-13, 15, and 35 is an improper piecemeal interpretation of the cited references. Ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language, and considering both the invention and the prior art references as a whole. M.P.E.P. § 2141.02 (emphasis added). "In determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been

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obvious, but whether the claimed invention as a whole would have been obvious." M.P.E.P. § 2141.02; *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530 (Fed. Cir. 1983); *See also, Schenck v. Nortron Corp.*, 713 F.2d 782 (Fed. Cir. 1983).

For example, each of claims 11 and 35 recites a plastic substrate for a membrane image transfer (MIT) and an ink printed by MIT on the substrate and adhered thereto for replacement of metallic or glass articles. Contrarily, *Thakrar et al.* is absent any teachings of a plastic substrate and an ink printed/adhered by MIT on the substrate. Rather, *Thakrar et al.* merely teaches a casting mold temporarily having an ink pattern thereon for a process of making contact lenses. *See Thakrar et al.*, col. 3, lines 32-36 and col. 4, lines 26-39.

The process taught in *Thakrar et al.* involves a mechanical altering and softening of the surface of resin/colorant capsules. Moreover, the solvent of the ink pattern in *Thakrar et al.* is then evaporated, leaving on the mold surface a deposition in which insoluble colorant particles are encapsulated in the resin. *Thakrar et al.*, col. 5, lines 7-26. Thereafter, a monomer is poured into the mold to form the lens. At that point, a mechanical altering and softening of the surface of the individual resin/colorant capsules takes place. *Id.* That is, the monomer penetrates the interstices between the capsules and thereabout, so that the capsules become impregnated in the monomer matrix with the pattern remaining intact. *Id.* Additionally, the pattern is not printed on the mold as in the claimed invention, but rather a thin layer of monomer interposes itself between the resin/colorant capsules and the casting mold surface.

As an extension of this phenomenon, a thin layer of monomer interposes itself between the resin/colorant capsules and the casting mold surface, so that when the finished lens is subsequently removed from the mold, the surface is a substantially intact layer of lens forming material, with the printed pattern of resin/colorant capsules located beneath said surface, but closely adjacent thereto.

Id.

Furthermore, in the case interview with Examiner Ferguson on December 14, 2005, the Examiner stated that she broadly defined the meaning of "an ink printed on a substrate" to include both a final substrate as well as any transient substrate

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used in a printing process, e.g., a casting mold. However, if the ink of the present invention were dried or cured during a printing process on a transient substrate, the printing process would not function as intended. The casting mold in *Thakrar et al.* and the anterior and posterior molds (6, 7) in *Li et al.* are each a transient substrate during the printing process. In a membrane image transfer process as recited in claims 11 and 35, the comparable transient substrate would be the soft deformable membrane (218) used to transfer the ink to the surface of a final plastic article (220) as described in the specification of the present application. Page 7, paragraph [0023]. The inventors being their own lexicographer do not intend to include transient articles upon which the ink is printed. For example, a membrane image transfer article refers to the result (220) of the MIT process and not a transient component therein as described in the present application. The inventors' intention is further inferred in the specification (page 27, paragraph [0062]) by defining the printing capability of an ink as being partially determined via the percentage of ink transfer, the thickness of the print, and the adhesion of the print. In this example, the ink is transferred from the transient substrate to the final article (specification, page 27, paragraph [0062]). The printing process would not function as intended if the ink of the present application were dried or cured during a printing process on a transient substrate. Thus, the rationale of combining *Thakrar et al.* and *Li et al.* for the rejections of claims 11-13, 15, and 35 under 35 U.S.C. § 103(a) is improper.

Contrary to the Examiner's assertions, it would not have been obvious to provide and test the ranges as claimed in claims 11 and 35. As provided in the background, there are significant differences between screen printing and pad printing with respect to composition of ink utilized. See Specification, paragraph [0005], page 2. Typically, inks used in such application methods are different in their solvent makeup. In order not to dry in the screen, the ink formulations used in screen printing contains solvents having evaporation rates lower than those used in pad printing inks. *Id.* Most commercial screen printing and pad printing inks will not feasibly function in a printing process that combines both conventional printing techniques into one, such as membrane image transfer printing. *Id.* In pad printing ink formulations, solvent evaporation is utilized to modify rheological properties and surface tension in order to provide a "tacky" film on the pad during transfer. *Id.*

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Thus, given the differences in properties of the inks and unexpected results, the inks recited in claims 11 and 35 for MIT printing is non-obvious. See Specification paragraph [0005], pages 2-3. Furthermore, as mentioned in the specification of the present application, the ink systems that are compatible with a MIT printing process were surprisingly found to exhibit a specific range of thixotropic, compliance, dynamic, and yield stress properties. See Specification, paragraph [0027], page 10. Thus, it would not have been obvious to one of ordinary skill in the art to provide and test the ranges as claimed in claims 11 and 35.

Claims 12-22 generally depend from independent claim 11. Thus, claims 12-22 are allowable for the reasons provided above.

Responsive to the rejections of claims 24-34 under 35 U.S.C. §103(a) based on the combination of *Thakrar et al.* (U.S. Patent No. 6,284,161), *Li et al.* (U.S. Patent No. 4,531,122), and *Suzuki* (JP 57170843), the Applicants assert the arguments provided above in combining *Thakrar et al.* and *Li et al.*

Moreover, the combination fails to teach or suggest each and every element as recited in the claimed invention. For example, independent claim 24 recites steps of "applying a printed decoration;" "forming the membrane;" "adhering the membrane image to the substrate;" "maintaining pressure;" and "separating the membrane from the substrate." (See *claim 24 of the present application for a more detailed recitation thereof.*) The combination of the references cited fails to teach or suggest each of the steps as recited therein. Furthermore, there is simply no motivation to combine such references.

Claims 25-34 generally depend from independent claim 24. Thus, claims 25-34 are allowable for the reasons provided above.

Thus, claims 11-22 and 24-35 are in a condition for allowance and such action is earnestly solicited.

Respectfully submitted,

November 7, 2006

Date


Lawrence G. Almeda (Reg. No. 46,151)BRINKS
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